10/681,039

REPLACEMENT SHEET

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PATENT & TRADEMARK OFFICE

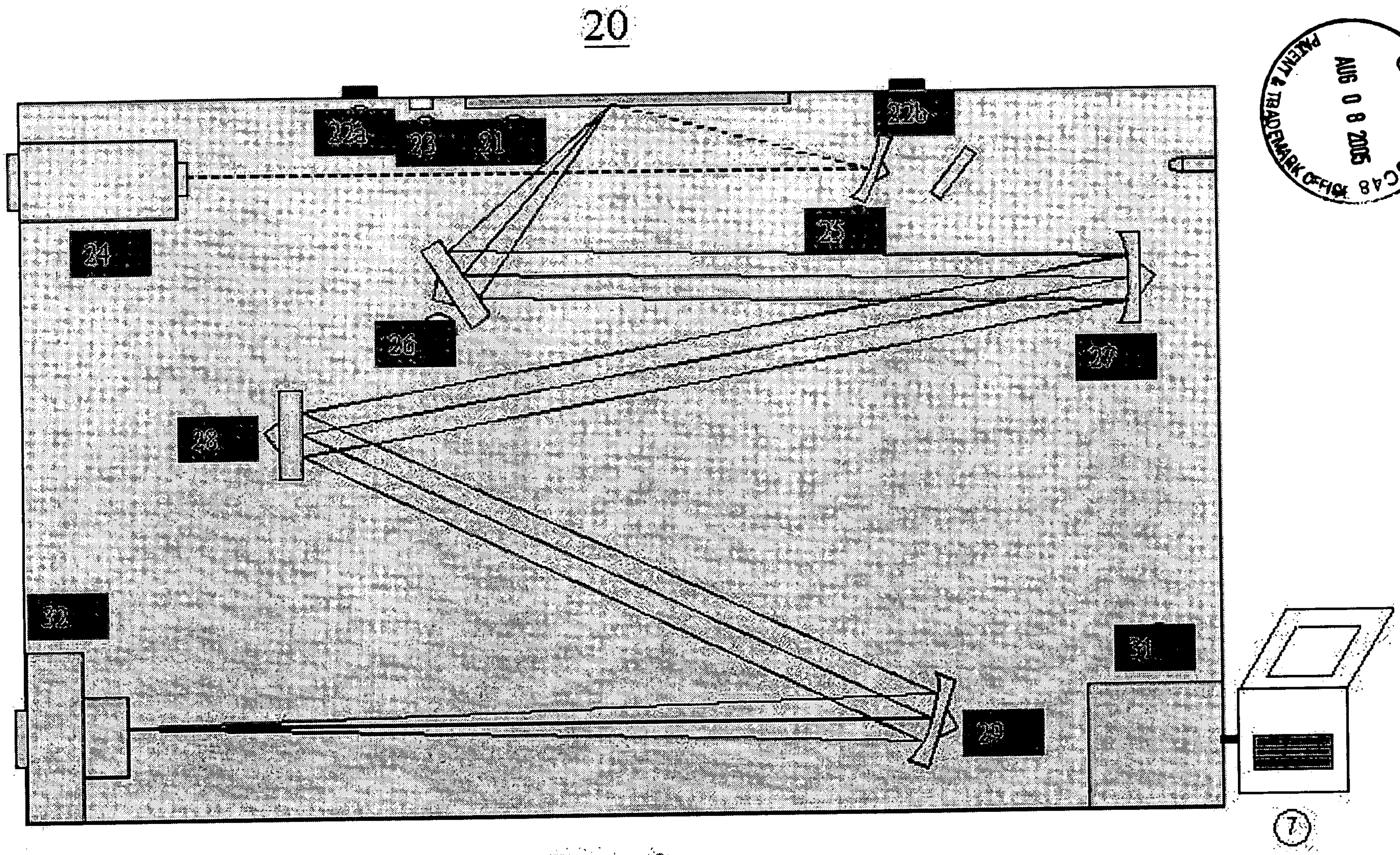

Figure 2
Raman Scanner Internal View Standard Operation Mode

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30

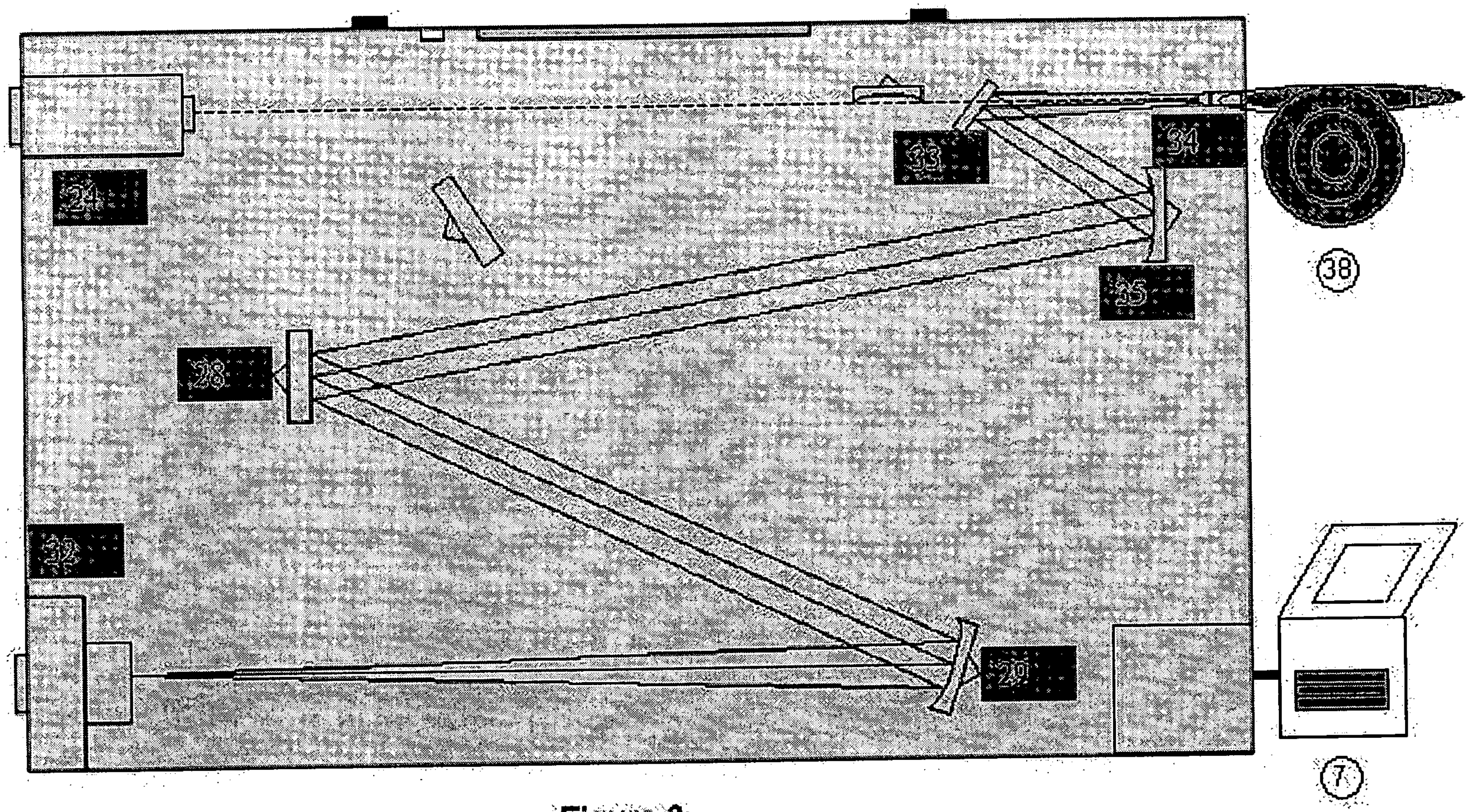

Figure 3
Raman Scanner Internal View Optical Probe Operation Mode

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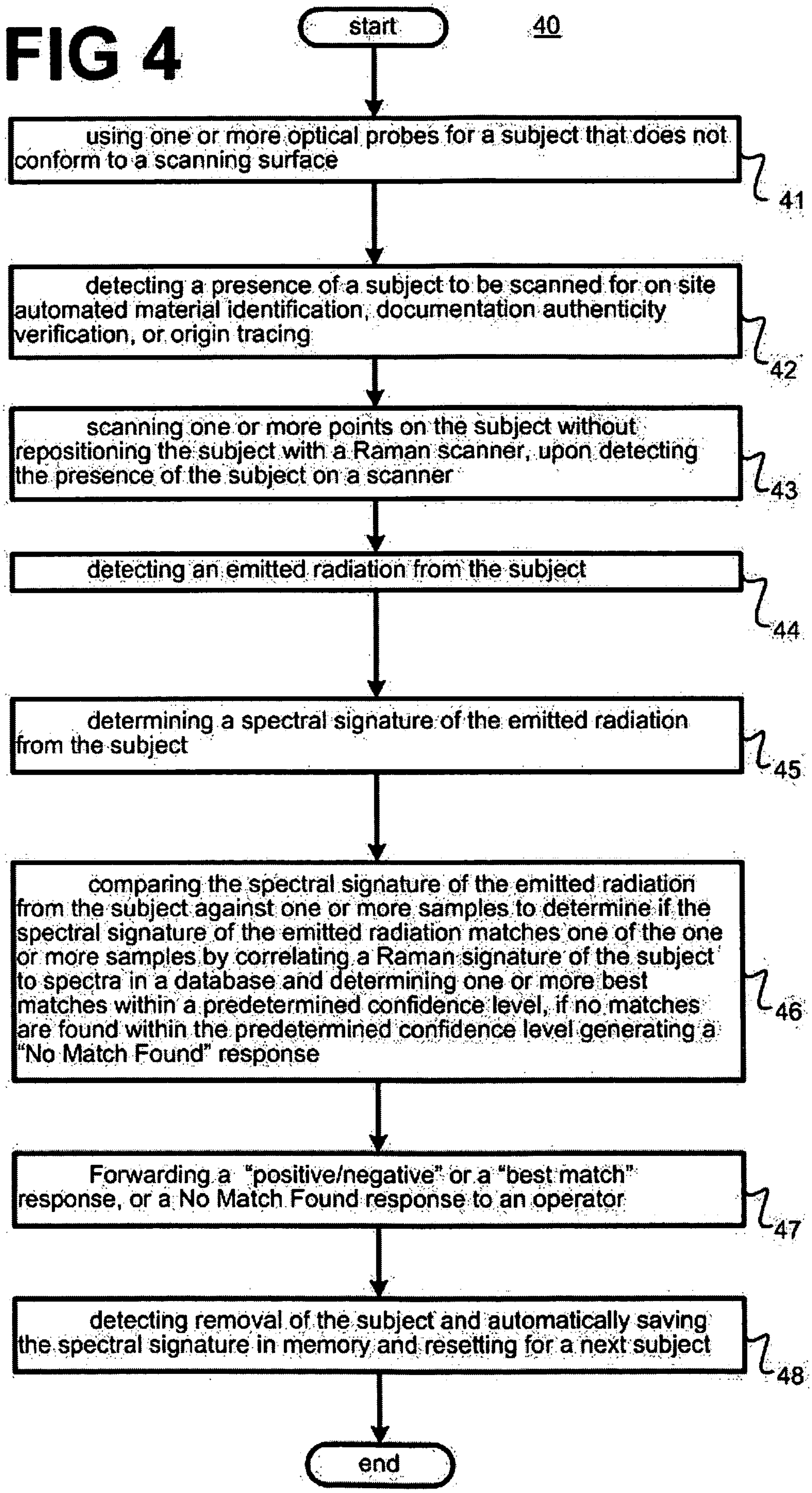
FIG 4



using one or more optical probes for a subject that does not conform to a scanning surface

detecting a presence of a subject to be scanned for on site automated material identification, documentation authenticity verification, or origin tracing

scanning one or more points on the subject without repositioning the subject with a Raman scanner, upon detecting the presence of the subject on a scanner

detecting an emitted radiation from the subject

determining a spectral signature of the emitted radiation from the subject

comparing the spectral signature of the emitted radiation from the subject against one or more samples to determine if the spectral signature of the emitted radiation matches one of the one or more samples by correlating a Raman signature of the subject to spectra in a database and determining one or more best matches within a predetermined confidence level, if no matches are found within the predetermined confidence level generating a "No Match Found" response

Forwarding a "positive/negative" or a "best match" response, or a No Match Found response to an operator

detecting removal of the subject and automatically saving the spectral signature in memory and resetting for a next subject

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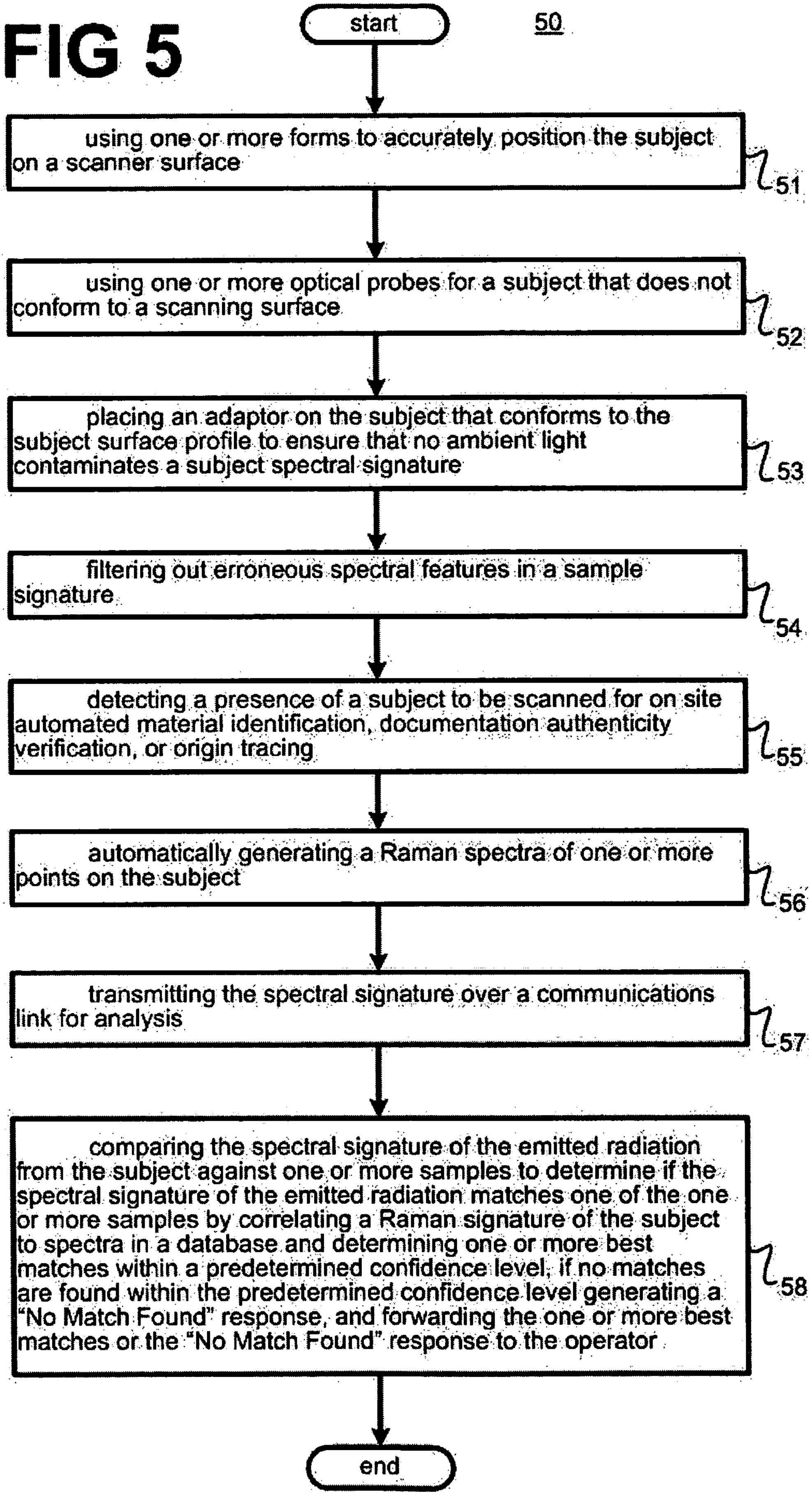
FIG 5


start
50
using one or more forms to accurately position the subject on a scanner surface
51
using one or more optical probes for a subject that does not conform to a scanning surface
52
placing an adaptor on the subject that conforms to the subject surface profile to ensure that no ambient light contaminates a subject spectral signature
53
filtering out erroneous spectral features in a sample signature
54
detecting a presence of a subject to be scanned for on site automated material identification, documentation authenticity verification, or origin tracing
55
automatically generating a Raman spectra of one or more points on the subject
56
transmitting the spectral signature over a communications link for analysis
57
comparing the spectral signature of the emitted radiation from the subject against one or more samples to determine if the spectral signature of the emitted radiation matches one of the one or more samples by correlating a Raman signature of the subject to spectra in a database and determining one or more best matches within a predetermined confidence level, if no matches are found within the predetermined confidence level generating a "No Match Found" response, and forwarding the one or more best matches or the "No Match Found" response to the operator
58
end